



# Technical Support

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## Aluminium frame finishes

### Introduction

**Since mill finish (untreated) aluminium weathers unevenly and unattractively, anodising and organic finishes have been used to protect architectural metalwork. Once finished, aluminium is virtually maintenance free. However, regular maintenance will maintain the original appearance for many years.**

The accumulation of atmospheric grime makes it necessary to clean the surface of the frames periodically. In areas with high concentrations of salt water or aggressive emissions from industrial plants, cleaning should take place once every three months. This can usually be carried out with the glass cleaning contract. In a relatively cleaner rural environment, once every six months should be sufficient.

Providing the recommended frequency is maintained it should not be necessary to use anything more than a mild detergent in warm water. A nylon brush or nylon cleaning pad can be used to remove accumulated deposits. Where it is necessary to use a stronger cleaner white spirit or a proprietary non-scratch cream cleaner may be used. The use of alcohols, acid or alkaline industrial cleaners should never be used. Certain special cleaners may be suitable but should be checked for compatibility in a concealed area which should be checked once the solution has dried.

Cleaned areas must be rinsed well and dried with a soft cloth or leather. A wax polish may be applied once a year to polyester powder coated aluminium to restore gloss.

If small repairs to painted surfaces are required touch-up paint can usually be obtained through the installations supplier.

## Glazing gaskets and weather seals

Glazing gaskets are generally manufactured from extruded E.P.D.M. as are the weather strips within

opening windows. Whereas gaskets are generally maintenance free they should be examined occasionally for deterioration. Broken or poor fitting seals will affect the watertightness of the product or allow an increase in air infiltration.

Specialist gaskets are generally purpose made and can not be replaced with standard items. If replacements are required these can be obtained from the installations supplier.

### Perimeter seals

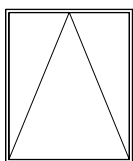
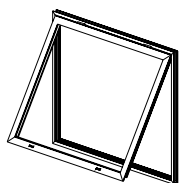
Generally mastics and sealants have a shorter life than that of the aluminium frames and therefore will require periodic inspection. Where the seal has deteriorated it should be raked out and be replaced using the same material or a superior product compatible with the surrounding materials. Advice on suitable seals should be obtained from a sealant manufacturer.



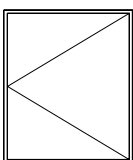
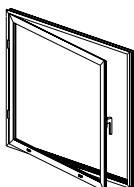
# Technical Support

## Window and Door Systems

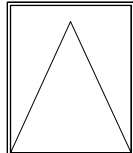
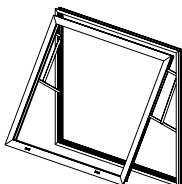
**Typical designs**   **Drawing symbol**   **Description & Associated Hardware** (see key page 4)



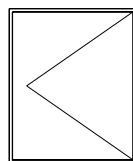
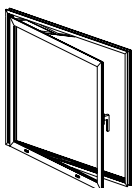
**Top Hinged Casement.** (Open Out only)  
H1, R1, R2, S1, S2, S3, S4,



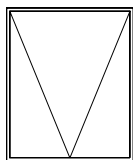
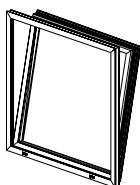
**Side Hinged Casement.** (Open In or Out, left or right hand)  
H1, R1, R2, S1, S2, S3, S4,



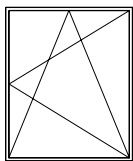
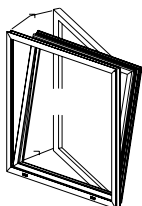
**Top Projected Casement.** (Open Out only)  
H2, R1, S1, S3,



**Side Projected Casement.** (Open Out only)  
H2, R1, S1, S3,



**Bottom Hinged Casement.** (Open In only)  
H1, R1, R2, S4, S5

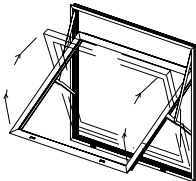
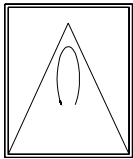
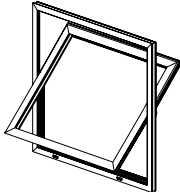
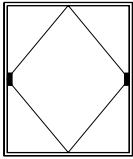
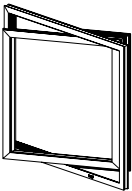
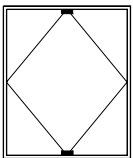
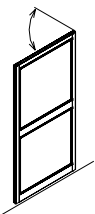
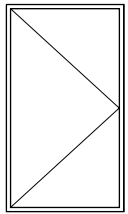
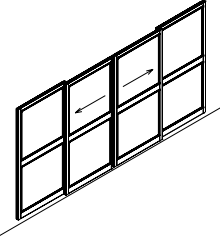
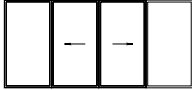
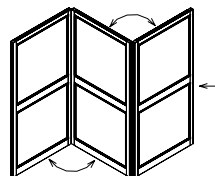
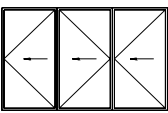


**Tilt/Turn.** (Open In only)  
Turn position for cleaning only.  
G1,



# Technical Support

## Window and Door Systems

Typical designs	Drawing symbol	Description & Associated Hardware (see key page 4)
		<b>Top Swing Fully Reversible.</b> (Open Out only) G2, S1, S2, S4,
		<b>Horizontal Reversible Pivot</b> G3, S1, S3, S4, S5, D6
		<b>Vertical Reversible Pivot</b> G3, S1, S3, S4, S5, D6
		<b>Swing Door</b> (Double or Single action) R1, D1, D2, D3, D4, D6, D7
		<b>Sliding Doors</b> (Manual & Automatic) D5, D6
		<b>Sliding/Folding</b> D4, D5, D6



# Technical Support

## Recommended maintenance procedures

**Regular maintenance of mechanical components will reduce wear and prolong serviceable life.**

### Hardware Maintenance Key

- ☒ No maintenance required
- ☒☒ Periodic maintenance with simple tools
- ☒☒☒ Periodic maintenance by competent engineer
- ☒☒☒☒ Seek expert advice

- (H1) Casement Hinges ☒☒
- (H2) Friction Hinges ☒☒

- (R1) Restrictor Stays ☒☒
- (R2) Friction Stays ☒☒

- (S1) Cockspur Handles ☒☒
- (S2) Folding Cam Openers ☒☒
- (S3) Espagnolette locking mechanisms ☒☒\*
- (S4) Remote Window Control Systems ☒☒☒☒
- (S5) Spring Catches ☒

- (G1) Tilt/Turn Mechanisms ☒☒☒\*
- (G2) Top Swing Hardware ☒☒\*
- (G3) Friction Pivots ☒☒

- (D1) Concealed Transom Door Closers ☒☒☒
- (D2) Surface Mounted Door Closers ☒☒☒\*
- (D3) Floor Springs ☒☒☒☒
- (D4) Butt Hinges ☒☒
- (D5) Sliding Door Wheels ☒☒
- (D6) Locking Cylinders ☒☒
- (D7) Panic Exit Devices ☒☒☒\*

\* NOTE. All major adjustments or replacement of worn or damaged parts must be performed by a qualified technician.

H1) (H2) (R1) (R2) (S2) (D4) (D5)

Remove any dirt or grime with a damp, lint free cloth and soapy water then wipe dry. Check all fixings and tighten as necessary. Lubricate moving parts with a proprietry light oil or graphite. Sliding friction blocks should not be lubricated. Friction can be adjusted by turning the small set screw in the block. Pairs of friction stays should be adjusted equally to prevent twisting of the window frame.

(S1) (D6)

Check Fixings and tighten as necessary. Lubricate locking cylinders with graphite. Do not use oil.

(S3\*) (G1\*) (D7\*)

Examine all components for wear and correct seating. Clean with a damp cloth and soapy water then wipe dry. Tighten all fixings as necessary. Lubricate all moving parts with resin free grease or oil, i.e. locking points on door or window frames.

(G2\*)

Clean with a damp cloth and soapy water then wipe dry. Tighten all fixings as necessary. The aluminium channels fitted to the vertical window jambs should be lightly lubricated along with the pivot points. Use either acid free oil, petroleum jelly or silicone lubricant.

(G3)

Components should be cleaned in accordance with recommendations for the cleaning of aluminium frame finishes. Tighten all fixings as necessary. If friction adjustment is necessary, tighten hard, the friction with a hexagon key, through a vent in the side of the pivot housing, rotate the window several times to bed in the friction. Slacken off until the desired amount of friction is achieved. Adjust pivots evenly to avoid twisting of the window.

(D2)

Clean with a damp cloth and soapy water then wipe dry. Tighten all fixings as necessary. Lubricate all moving parts with resin free grease. For any adjustment refer to the manufacturers installation instructions. If adjustments are made contrary to manufacturers instructions guarantees may be invalid.



# Technical Support

## Concealed Overhead Door Closers

### Introduction

**Axim door closers and accessories are guaranteed for a period of 30 months from the date of manufacture against defect in material and workmanship. The guarantee is void if the product has been incorrectly installed or damaged in use. The following notes on maintenance should ensure the closer will operate trouble free for many years.**

The set of door controls comprises three main items. Firstly, a sealed unit 'the closer body' which is fitted inside the transom bar above the door and concealed with a removable cover plate. Secondly, a steel drive arm with a steel fixing channel fitted inside the top rail of the door 'the drive arm' which may be side or end loading. Finally the door is supported by a 'bottom pivot assembly'. This consists of a shoe fitted to the underside of the door and a pivot bolt, either fitted to a floor-fixed plate or directly fixed to an aluminium threshold.

### Closer body

Broadly speaking there are six different closer options with the same external appearance. Closers are fitted with different size internal springs to give light, medium or heavy closing forces. Depending on varying factors such as weather conditions and width and height of the door the correct strength closer should be selected. Closers are also specified 'retention' or 'non-retention'. The former, sometimes referred to as hold-open, hold the door open at 90 degrees whilst the latter, sometimes named no hold-open, will return the door to a closed position regardless of the angle at which it is released. It is important not to wedge the door open as the wedge or stop will oppose the door closer and in time will twist the door.

It is important to realise closers can not be altered in the field and if necessary the closer would require exchanging for an alternative option.

Doors using this type of door closer are generally centre hung and double acting, i.e the door will open in and out unless prevented from doing so by

an applied stop. Door closers will open to 130°. Door stops should be fitted to prevent the door striking the jamb or opening passed this angle, as damage could occur to the door, frame, and/or closer.

### Removing the door

Should it be necessary to change the door closer, this is not a difficult job and should take no more than an hour. Tools required:- Small and medium sized pozi head screwdrivers, 4mm and 5mm allen keys and a 10mm open-ended spanner.

Remove the name plate from the internal face of the door to expose the clamp block and fixings. Using an allen key remove the socket head bolts and special lock washers and put to one side. With someone to steady the door from outside, push the door away from the closer spindle, the door may require tapping gently with a soft faced mallet. Once the door is released from the spindle the door can be lifted off the bottom pivot.

Stack the door in a safe place.

Remove the M4 screws from the cover plate and prise the cover plate free.

The closer body is now visible and reference marks should be noted.

Stamping on the end of the spindle should read N.H.O or H.O.90 referring to the retention option.

A number on the circular cover cap will relate to spring power size.

A date stamp on the closer body, 96-12 for example will determine if the closer is within the warranty period.

If the closer is faulty and still under guarantee please contact your supplier before undertaking any further work.

### Changing the closer unit

With a screwdriver loosen the two round head pozi screws connecting the closer to the jamb bracket. Support the closer and remove the two hexagon head bolts and washers. The closer can now be lowered and removed. Take care not to drop it, the closer weighs 4 Kgs. (8.8 lbs.)

Whilst the closer is removed check the fixings in the jamb bracket and tighten securely if loose. Check the steel angle bracket is secure within the header



# Technical Support

bar. Examine the pivot bearing in the threshold or floor plate. The bearing should be able to rotate freely and the 1/2" bolt should be secure.

To replace the closer reverse the removal procedure and ensure the clamp block screws and lock washers are very tight.

If door adjustment is required refer to the section ALIGNMENT.

## Fault Diagnosis

**The following notes should enable a competent maintenance manager to rectify any problems that might occur. If in any doubt please contact the manufacturer as the wrong action could invalidate the warranty.**

**1) The door does not centre firmly but swings freely perhaps for a centimeter either side of the closed position. This is usually due to the clamp block not being fully tightened.**

Remove the small aluminium name plate from the door to expose the clamp block and screws. With an allen key wind in the two or three screws, depending on the arm type, very tightly. Refit the name plate.

**2) The door does not centre firmly as in item 1) and has even more free play.**

It is possible the clamp block has been too loose for too long and the closer spindle has worn if this is the case carry out the remedy as in item 1). If the problem persists the closer and/or top drive arm in the door will need replacing. Note this is not a fault of the closer or accessories but is due to indifferent installation.

**3) The door comes to rest firmly but is up to 25mm off centre.**

Procure a step ladder, or other means, enabling you to look down on to the top rail of the door. Loosen the hold-down, countersunk screw, securing the top arm, with an allen key. Adjust the hexagon bolts against the sides of the steel channel until the door centres in the correct position. Tighten the hold-down screw and check other fixings.

**4) The door drags on the floor/threshold or rubs on the underside of the transom.**

Procure a step ladder, or other means, enabling you to look down on to the top rail of the door. Loosen

the hold-down, countersunk screw, securing the top arm, with an allen key and loosen off the hexagon bolts slightly.

a) Standard top arm type:

With the door open use a flat bladed screwdriver to turn the screw clockwise, lifting the door or anticlockwise lowering the door.

b) End load arm or special side loading:

Loosen the locknut against the upstand of the channel and turn the socket head screw with an allen key, clockwise, lifting the door or anticlockwise lowering the door. Tighten the hold-down screw and check other fixings.

**5) The door moves loosely off centre apparently out of control.**

The closer has been forced and strained for some reason and the internal parts have been damaged. The closer will need replacing.

**6) Oil leaking.**

Before despatch each closer is subjected to stringent tests to ensure against leaking. If oil appears to be leaking from the closer try to pin point the source. If leaking from around the spindle the seal may be damaged. If leaking from around one of the valve screws the same could apply. Providing the closer is within the warranty period and has not been subjected to misuse it will be replaced.

A frequent cause of oil leaks is due to the closer being drilled by an installer fitting alarms, louvres or fanlights. This being the case the closer will need to be replaced.

## Six monthly maintenance

Detach the door as previously described, remove the coverplate and expose the closer. Tighten all fixing screws and bolts. Inspect the floor bearing and wipe away any debris, check the bearing rotates freely and the bolt is secured firmly in the plate or threshold. Lubricate with grease if necessary. Tighten all fixings, including the three screws to the bottom rail of the door securing the pivot shoe. Replace the coverplate and remount the door. Tighten all the top arm fixings, particularly the clamp block screws and centre locking screw. Replace the name plate and clean down the door as per finishers recommendations.



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## **Closing speed adjustment**

Providing the closing and final latching speeds of the door closer have been correctly set on installation it should not be necessary to readjust at a later date. However, after the door closer has completed a short settling in period, minor adjustment may be required. It should be noted that inexperienced tampering with the valve screws could cause irreparable damage. The following notes will enable the operator make simple adjustments - if in any doubt please seek advice from the manufacturer.

It is important to realise that the two valve screws will adjust the closing and latching speeds of the door closer, they will not adjust the closing or opening forces in any way. It is very likely the door closer will require only very minor adjustment, perhaps only one half turn of the valve screw. After any adjustment the door closing speed should be checked twice, by opening the door fully and allowing it to close, before proceeding.

Care must be taken not to unscrew the valve head beyond the level of the closer body when increasing the closing speed. Turning the valve passed this limit will allow oil to escape and the closer will need to be replaced. On the other hand if the valve is turned clockwise, decreasing the closing speed, adjustment must cease when resistance is felt as the valves are manufactured from soft metal and will be damaged along with the oil seal if excessive force is used.



# Technical Support

## Panic and Emergency Exit Devices

### Introduction

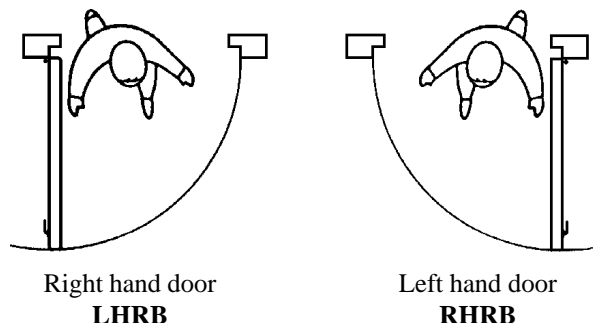
**Axim Emergency Exit Hardware is guaranteed for a period of 30 months from the date of manufacture against defect in material and workmanship. The guarantee is void if the product has been incorrectly installed or damaged in use. The following notes provide information relating to correct specification of hardware and outlines recommended maintenance procedures which should ensure the hardware will operate trouble free for many years.**

There are many types of emergency exit devices and this document will cover 3 of those types.

- Emergency exit push handle.
- Concealed panic bolt push bar.
- Panic Latch push bar.

Some of these types are handed and Fig. 1 explains how to determine the hand. This is most important when quoting hardware and helps eliminate costly mistakes.

Door handing fig. 1



### Emergency Exit Push Handle / Push Bar with concealed locking rods

The emergency exit push handle comprises a handed push paddle which operates concealed locking rods. This type is designed for use with hollow doors i.e. aluminium, steel or PVCu. It is

not suitable for timber doors. The push bar type uses the same internal mechanism which is activated by the full width crash bar. The mechanism may be connected to either housing and therefore the unit is non-handed.

It is important to realize the internal handles are designed to be pushed in an emergency to release the door and although the handles are used to pull the door closed to reset the hardware. They are not intended to be used in high traffic areas where the handles are used to pull doors closed on regular intervals.

If installed correctly the hardware requires little maintenance, however, the following instructions will extend the life of the product if carried out on a regular basis.

### Six monthly maintenance

Check that the emergency exit hardware operates and the door can be opened in the correct manner. Ensure the door operates smoothly and carry out routine maintenance as per door manufacturers instructions.

With the door open depress the bar or paddle handle and release, the bolts should remain retracted whilst the door is in this open position. The top bolt should clear the underside of the transom by no less than 3mm. In most cases this will be level with the top of the door. With the door still open activate the trip mechanism, positioned at the top of the door on the closing face, the bolts should throw immediately.

It is important that the catch operates correctly, especially in the case of fire doors and alarmed doors which will otherwise remain ajar or unlocked. If adjustment is necessary remove the screws securing the nylon guide block in place. Take care not to allow it to drop down inside the stile.

Remove the nylon block and lubricate the steel catch until the spring and catch operate freely.

If the bolt position requires height adjustment, turn the bolt head until the correct projection is achieved. Ensure the bolt retracts completely when depressing the panic bar or handle.

Refit the guide block by reverse procedure.

Adjustment to the bottom bolt can be carried out in the same way.

Check the housing to both door stiles for the push bar type or the single housing for the push paddle





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type. The housings can be removed by slackening the 3 No. 15/32" x 1/4" set screws with a 3mm Allen key. The active housing can be removed from the door by sliding out the connecting pin from the actuator pin. This will present the 2 No. shoulder bolts which should be secured firmly. If an outside rim cylinder has also been fitted 2 No. screws should also be visible, check these screws are secure taking care not to over tighten. The operating mechanism can be lubricated with a spray grease through the actuator pin slot and the housing reinstated by reverse procedure.

If faults can not be rectified using the information above contact the supplier for further advice.

## **Panic Exit Latch**

The emergency exit panic latch utilises a push bar which operates a latch. This type is designed for use with hollow doors i.e. aluminium, steel or PVCu. For use with timber doors fixing plates must be fabricated to accept the shoulder bolts supplied. The latch type mechanisms are handed and cannot be altered in the field.

It is important to realize the internal handles are designed to be pushed in an emergency to release the door and although the handles are used to pull the door closed to reset the hardware. They are not intended to be used in high traffic areas where the handles are used to pull doors closed on regular intervals.

If installed correctly the hardware requires little maintenance, however, the following instructions will extend the life of the product if carried out on a regular basis.

## **Six monthly maintenance**

Check that the emergency exit hardware operates and the door can be opened in the correct manner. Ensure the door operates correctly, without binding and carry out routine maintenance as per door manufacturers instructions.

With the door open, depress the bar and release, the latch bolt should retract fully and return to its normal position. Each housing can be removed by slackening the 3 No. 15/32" x 1/4" set screws with a 3mm Allen key. With the crash bar still attached

lift the unit away from the door.

With a light spray grease lubricate the 2 No. return springs and internal components. Do NOT remove the 2 No. pozi head screws at the top of the unit. Check the 2 No. shoulder bolts to each door stile and secure if necessary. If the door is furnished with an outside rim cylinder, check to ensure correct operation and lubricate with a light graphite lubricant. Do not use oil.

Reinstate the housings in reverse procedure and tighten the set screws. Lightly oil the pivots through the sides of each housing and wipe clean. Check the bar is fitted tightly between the housings. Apply a light lubricant to the roller on the lock keep and adjust the keep position if necessary. Check fixings are all tight.

If faults can not be rectified using the information above contact the supplier for further advice.